

**Collin County Toll Road Authority
Outer Loop Segment 3a from DNT to East of SH 289
Supplemental Agreement No. 2 to Agreement No. 2015-107**

Scope of Work

The work to be performed by the Engineer shall consist of revisions to the schematic and final plans, specifications and estimates (PS&E) for the improvements to the Collin County Outer Loop Access Road (ultimate eastbound 2 lane frontage road with curb and gutter) along Segment 3A from the Dallas North Tollway (DNT) to east of Preston Road (SH 289) (the Project). Further investigation into utility design constraints have determined that a shift in the proposed alignment (impacting approximately 8,000 LF of the project corridor) would eliminate costly relocation. In addition, the County has requested assistance with public involvement with impacted owners along the project corridor.

Except as provided herein, all terms and conditions of the original contract remain in full force and effect and may only be modified in writing signed by both parties.

The deliverables under this supplemental agreement shall include a new Meetings with Affected Property Owners (MAPO) exhibit, an update to the previously submitted Drainage Report, and update to the 30% PS&E.

BASIC SERVICES

1. ASSEMBLY AND REVIEW OF DATA

No additional work included as part of this supplemental agreement.

A. ROADWAY DESIGN

GENERAL

Typical Sections

The ENGINEER shall update the station ranges for the 30% proposed typical sections of the Collin County Outer Loop Access Road, County Roads 51, 52, 53, 88, 1117, and BNSF RR.

TRAFFIC CONTROL

No additional work included as part of this supplemental agreement.

ROADWAY DESIGN

Horizontal Alignment Data Sheet

The ENGINEER shall update the 30% plan sheet with all applicable horizontal alignment data (Geopak output) along the project.

Roadway Plan and Profiles

The ENGINEER shall update the 30% plan and profile sheets based on the revised horizontal and vertical geometry.

Intersection Layout Sheets

The ENGINEER shall update 30% intersection details for four (4) intersections (County Road 52, County Road 51, County Road 53 / County Road 1117, and SH 289).

Roadway Cross Sections

The ENGINEER shall update the 30% proposed cross sections based on the revised horizontal and vertical geometry to establish earthwork quantities, grading, and right-of-way need.

3. DRAINAGE DESIGN

HYDROLOGY

The ENGINEER shall update the overall drainage areas based on the adjusted horizontal alignment and recalculate the discharge directed to each proposed culvert. Update the 30% drainage area map identifying all sub-areas.

HYDRAULIC DESIGN

Hydraulic Design for Culverts & Storm Sewer

The ENGINEER will perform necessary 30% hydraulic computations for the design of three (3) new culvert locations based on the updated horizontal alignment utilizing GEOPAK Drainage, THYSIS Culvert or HY-8.

Bridge Hydraulic Reports

The ENGINEER shall prepare a hydraulic study utilizing HEC-RAS to re-analyze the proposed conditions of the following FEMA regulated waterways:

a) Doe Branch

The ENGINEER will revise the “corrected effective” hydraulic model of the existing channels and conditions using the channel survey data and field observation notes, and available FEMA

maps and information. The ENGINEER will revise a hydraulic model of the proposed crossing utilizing the existing hydraulic model and incorporating the proposed structure.

The ENGINEER will revise the Hydraulic Reports for Doe Branch in accordance to the COUNTY and STATE criteria comparing the existing creek conditions with the proposed roadway crossing. Although CLOMR/LOMR submittals are not included in this scope, the ENGINEER shall prepare a drainage report with working maps, profiles, cross sections, and tables that are typically included in a LOMR submittal.

DRAINAGE STRUCTURE DESIGN

Culvert Layouts

Prepare three (3) additional non-bridge class culvert crossing layout sheets (30%).

OPEN CHANNEL DESIGN

The ENGINEER shall revise the proposed ditch and/or channel grading design based on the revised horizontal and vertical alignment.

STORM WATER POLLUTION PREVENTION PLAN (SW3P)

No additional work included as part of this supplemental agreement.

4. TRAFFIC DESIGN

SIGNING AND PAVEMENT MARKINGS

No additional work included as part of this supplemental agreement.

TRAFFIC SIGNALS

No additional work included as part of this supplemental agreement.

RAILROAD

Exhibit A Preparation

The ENGINEER shall revise an at-grade railroad Exhibit A (relocated at-grade crossing) for the Collin County Outer Loop Eastbound Frontage Road in accordance with BNSF railroad requirements.

5. BRIDGE DESIGN

DOE BRANCH

The ENGINEER shall update 30% Bridge Layouts for the proposed Doe Branch Bridge based on the revised horizontal bridge alignment. The structure is approximately 625' long and 30' wide with a varying (but approximate 30 degree) skew. It is assumed the structure will consist of an I-Girder superstructure supported by cast-in-place concrete bents on a drilled shaft foundation.

6. PROJECT MANAGEMENT

Project Coordination and Resolution Meetings

The ENGINEER shall attend the additional below listed meetings with the COUNTY with up to two (2) team members. Meetings will include the following:

1. Utility coordination meeting with Atmos
2. General Design Coordination Meeting (2)

Project Administration

Preparation of project correspondence and monthly progress reports, coordination with sub consultants, and routine project record keeping for an additional two (2) months.

Invoicing

Preparation of monthly invoices for the project including a progress report for the work completed the previous period for an additional two (2) months.

SPECIAL SERVICES

SS1. SURVEY AND RIGHT-OF-WAY

Additional work will include:

1. Revision of overall Parcel Exhibit Map for 14 parcels including creation of revised parcels.
2. Revision of 14 parcel boundaries including creation of polyline boundaries.
3. Revision of BNSF parcel exhibit.
4. Additional topographic survey of CR 1117 and railroad crossing location.
5. Additional 4 parcel exhibits for remainder tracts along CR 53.

SS5. PUBLIC INVOLVEMENT

A. Preparation of MAPO Exhibit/Schematic

The ENGINEER will provide a plan view exhibit at 1"=100' scale of the revised horizontal alignment showing proposed improvements and proposed right-of-way limits for use at MAPO meetings.

B. Meetings with Affected Property Owners (MAPO)

1. The ENGINEER will prepare a schematic exhibit (plan view only) for use in MAPO meetings based on the revised horizontal alignment.
2. The ENGINEER will attend thirteen (13) MAPO meetings estimated at approximately 30 minutes each over the course of three (3) days.

C. Additional Public Involvement

The ENGINEER will attend a public meeting and Commissioners Court meeting scheduled by the County and prepare a short project overview presentation to be given.